

CLAIMS

We Claim:

- 1 1. A control message structure for controlling communication between nodes
2 on a peer-to-peer network, said control message structure comprising:
3 a preamble for bus arbitration;
4 a destination address indicating a network address of a node to which a
5 control message is being sent;
6 a source address indicating a node as being a source of said message;
7 a payload containing said message; and
8 a checksum for checking whether the received message is valid.
- 1 2. A control message structure as in claim 1, said control message structure
2 further comprising:
3 a payload size indicating a size of said message.
- 1 3. A control message structure as in claim 2, wherein the preamble is a plurality
2 of bytes of data.
- 1 4. A control message structure as in claim 3, wherein each byte of the preamble
2 contains one bit of a binary number pattern.
- 1 5. A control message structure as in claim 4, wherein the preamble is 10 bytes
2 representing a 10-bit binary number.
- 1 6. The control message structure of claim 1, wherein each of the destination
2 address and the source address is one byte wide.
- 1 7. The control message structure of claim 1, wherein the payload size is two
2 bytes wide, the value of the payload size indicating the number of bytes in the
3 message.
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1 8. The control message structure of claim 1, wherein the checksum is a twos
2 compliment sum of the payload less the preamble and the checksum itself.

1 9. A method of controlling communication between nodes of a peer-to-peer
2 network. said method comprising the steps of:
3 monitoring activity on a control bus to determine when messages are being
4 sent and to determine when said control bus is quiet:
5 parsing header information to determine to which node a control message is
6 directed when said control bus is determined to be carrying control message
7 information, the node to which said control message is directed being a receiving
8 node; and
9 parsing said message from said control message, said control message being
10 parsed by said receiving node.

1 10. A method as in claim 9, wherein monitoring activity on the control bus
2 further comprises monitoring a control bus active signal.

1 11. A method as in claim 10. wherein the step of parsing header information
2 comprises
3 retrieving a preamble. a destination address. a source address and a message size
4 from said control bus.

1 12. A method as in claim 11, wherein when the control bus active signal is
2 asserted, said method further comprises the step of:
3 monitoring the preamble to determine if other nodes are in contention for
4 said control bus.

1 13. A method as in claim 9, wherein in the monitoring step when said control
2 bus is determined to be quiet, said method further comprises the steps of:
3 sending a preamble;

1 monitoring transmission of said preamble to determine if a collision has
 2 occurred;
 3 sending a balance of said message when a collision is determined not to have
 4 occurred; and
 5 releasing said control bus after said message has been sent and monitoring
 6 said bus.

1 14. A method as in claim 13, wherein the step of sending said message
 2 comprises sending a destination address, a source address, a payload size, a payload
 3 and a checksum.

1 15. A method as in claim 14, wherein the step of sending a preamble further
 2 comprises asserting a control bus status signal.

1 16. A method as in claim 15, wherein if in the step of monitoring transmission of
 2 the preamble it is determined that a collision has occurred, said method further
 3 comprising the steps of:
 4 releasing the control bus status signal; and
 5 monitoring the control bus until said control bus is determined to be quiet.

1 17. The method as in claim 16, wherein said control message is sent one byte at a
 2 time.

1 18. The method as in claim 17, wherein when said control bus is idle, all control
 2 bus signals are high.

1 19. A method as in claim 18, wherein one address is reserved for broadcast
 2 messages, all nodes processing broadcast messages.

1 20. A method as in claim 19, wherein a second address is reserved for a
2 conference/intercom function, only a conference feature node being able to acquire
3 the address reserved for said conference/intercom function.

1 21. A method as in claim 20, wherein the preamble is 8 to 10 bytes wide.

1 22. A method as in claim 21, wherein each byte of said preamble is one of two
2 values.

1 23. A method as in claim 22, wherein said payload size and said checksum are
2 each two bytes wide.

1 24. A method as in claim 23, wherein said message may be between 1 byte and
2 64K bytes long.